# Frankly Speaking

## The Annual Meeting

THE Annual Meeting of the Institute of Traffic Engineers in Columbus, Ohio on October 3, 4 and 5 will be its first full-scale convention independent of any other organization. The ever-increasing membership in the Institute has made this possible.

This year the Program Committee has endeavored to present a technical program for this Annual Meeting which will be constructive and beneficial to all attending. The program includes many of the current research projects that have been under way this year. Many of these projects are based on pertinent factual information needed by traffic engineers for solution of their traffic problems. One complete morning session is devoted to the very important parking problem and will include recent studies and recommendations on the parking problems in downtown Baltimore, Pittsburgh, and Philadelphia.

As the problem during the next several years will be a critical one for the traffic engineering profession, in view of the tremendous increase in vehicular traffic likely to occur, a complete afternoon session has been devoted to "Looking Ahead." This will include discussions in the fields of mass transportation, air transportation, pedestrian regulation and method of control, and the individual municipality's traffic problem.

As many members attending these meetings unquestionably have problems on which they want to receive advice and guidance, this year a portion of the program includes a question and answer period, under the title of "Stumping the Experts." Those members of the Institute of Traffic Engineers who have been engaged in traffic engineering for the longest period of time will serve as a panel and will endeavor to answer all technical traffic engineering questions from the audience. These men, who have been engaged in traffic engineering for at least fifteen years, will be able to advise effective procedures which they employed in similar problems. The program includes subjects important to traffic engineers employed by both state highway departments or municipalities.

The annual banquet, the "biscuit banter" breakfast, reports by various I.T.E. committees and the election and installation of new officers will again be a part of this year's program.

The Committee hopes that it has prepared a program that will be of material benefit to its members.

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# Detroit Without Mass Transportation

*by* LLOYD B. REID, *Member I. T. E.*
*Detroit City Traffic Engineer*

*On April 1, 1946, at 4:00 A.M., the street-car and bus operators of the Detroit Department of Street Railways pulled their vehicles off the streets of Detroit and kept them off until 6:00 P.M. April 7, 1946. The 1,800,000 people who daily use DSR equipment thus were forced to find other means of transportation in order to pursue their daily activities.*

*To a limited extent, the railroads, suburban buses and Detroit's 1,200 taxicabs provided transportation. Private passenger automobiles, however, were the main reliance of the great majority of people.*

*This report describes the effects of the strike on street traffic and on the various activities of almost 2,000,000 Detroit citizens.*

**Industry**

Normally, two-thirds of Detroit's industrial workers use private automobiles to and from work. A transit strike, therefore, could affect a maximum of one-third of the industrial employees.

Reports from the larger factories for the first day showed absenteeism ranging from "no effect" to as high as 21% as compared to an average of 4% to 7% for normal conditions.

Major plants, on the second day of the strike, reported "near-normal operations and little hampering of production."

**Schools**

Attendance at schools varied with the location and type of school. Five schools for handicapped children, whose pupils ride in chartered buses, had almost zero attendance. Public intermediate and high schools reported attendances ranging from 15% up to normal. The greatest absenteeism occurred in the schools located in the downtown area which draw students from all over the city. There is considerable basis for the suspicion that attendance was lower than necessary in several schools because the students used the transit strike as an excuse to "play hookey."

**Libraries**

The public libraries closed at 6:00 P. M. during the week compared to 9:00 P.M. under normal conditions.

**Railroads**

Railroad passengers were forced to wait up to an hour for taxicabs.

**U. S. Mail**

Mail carriers ride street cars and buses from substation to their route. The delivery of mail was affected only during the afternoon, when parcel post trucks could not be spared to carry foot postmen to their routes.

**Courts**

One trial was delayed half a day. Another court dismissed the jury panel. Court activities were reduced two-thirds.

**Traffic Volumes**

The Traffic Engineering Bureau recorded traffic volumes at six locations which reflect changes in city-wide traffic volumes. Data were obtained during the week before the strike, during the strike, and after the strike. The following table shows the variations from normal traffic:

| Date | | Increase Over Base (Previous) Week |
|---|---|---|
| Monday | First Day of Strike | +31% |
| Tuesday | Second Day of Strike | +24% |
| Wednesday | Third Day of Strike | +24% |
| Thursday | Fourth Day of Strike | +22% |
| Friday | Fifth Day of Strike | +31% |
| Monday | First Day after Strike | +11% |
| Tuesday | Second Day after Strike | + 7% |

The increase ranged from 63 per cent on Brush Street at Hague Street down to 10 per cent on Second Boulevard at Pingree Street.

**Accidents**

The police department reported, for the week of the strike, no traffic fatalities, a 10 per cent increase in injuries, and a 32 per cent increase in property-damage accidents. Property damage accidents increased in proportion to the increase in traffic, while injury accidents increased less than traffic volumes.

**Shopping in Neighborhoods**

There are about 18 major neighborhood shopping centers within the city. Their patronage consists not only of local residents but also people from wide areas of the city. Sales figures are not obtainable but Dunn and Bradstreet report about a 25 per cent reduction in sales from the previous week, with conditions "about normal" by Wednesday the third day of the strike. Purely local neighborhood stores reported no change. Observations by Traffic Engineering Bureau personnel indicated unusual activity in neighborhood shopping areas on Saturday, the sixth day of the strike.

**Speed on Major Thoroughfares**

Speed runs conducted on Grand River Avenue before and during the strike show the following results:

| | | Pre-Strike | | Strike | |
|---|---|---|---|---|---|
| Time | Direction | Hour Volume | Speed MPH | Hour Volume | Speed MPH |
| 7:30 A.M. | In | 1925 | 14.8 | 2540 | 11.2 |
| 7:50 A. M. | In | 1925 | 16.3 | 2540 | 13.5 |
| 1:30 P.M. | In | 1284 | 19.7 | 1513 | 20.1 |
| 1:00 P.M. | Out | 1120 | 19.9 | 1635 | 21.5 |
| 5:00 P.M. | Out | 2005 | 12.6 | 2596 | 14.0 |
| 5:20 P.M. | Out | 2005 | 12.7 | 2596 | 12.1 |

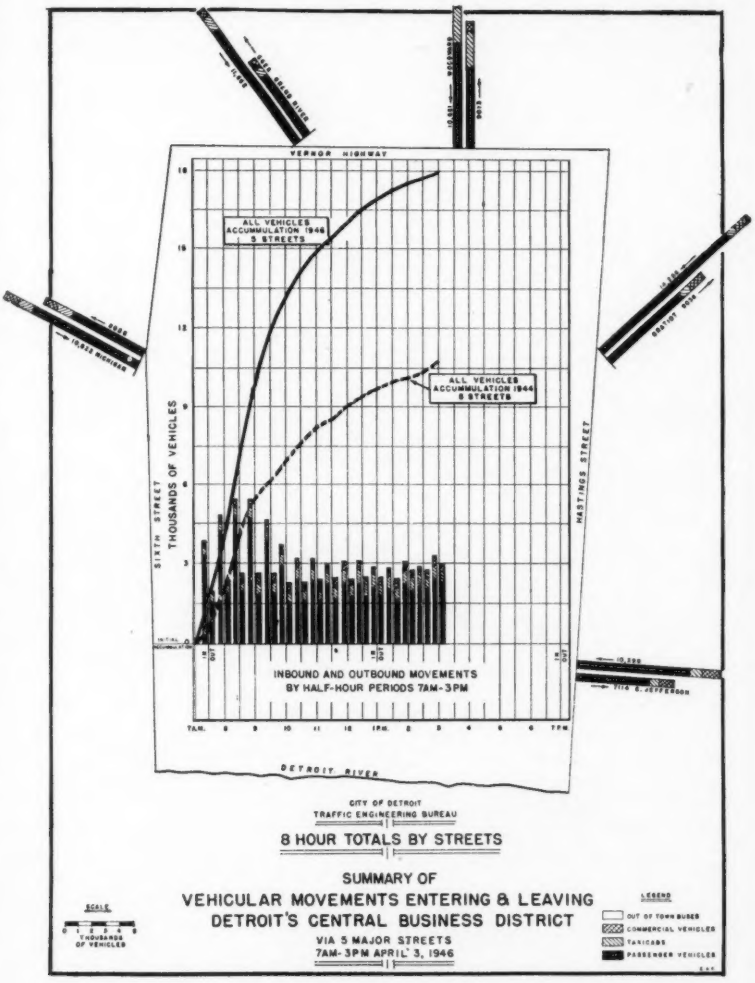
There was an appreciable decrease in overall average speed only during the morning rush hours. At all other hours speeds either increased or decreased very little, despite the increase in volume. The results of these speed runs support statements by several individuals that once on the main streets, they made better time than they did under normal traffic conditions.

**Central Business District**

Acute congestion occurred in the Central Business District, but only during the evening rush hour. For example, a 10 block section of Cass Avenue south of Grand River, which normally requires 5 minutes of driving time at 5:15 P.M., required 15 to 20 minutes during the strike. This condition was typical of the downtown area. In the Central Business District practically every intersection is signalized, and the streets do not have the capacity to discharge huge afternoon peak movements. In addition to downtown motorists leaving for home, a large amount of through traffic traverses the area during the evening rush hours, adding to the congestion. The haphazard location and design of parking lot entrances and exits also contributes to traffic jams at critical intersections. *The transit strike powerfully demonstrated the need for more positive control of parking lot entrances and exits and for more adequate street facilities to discharge cars into the main thoroughfares.*

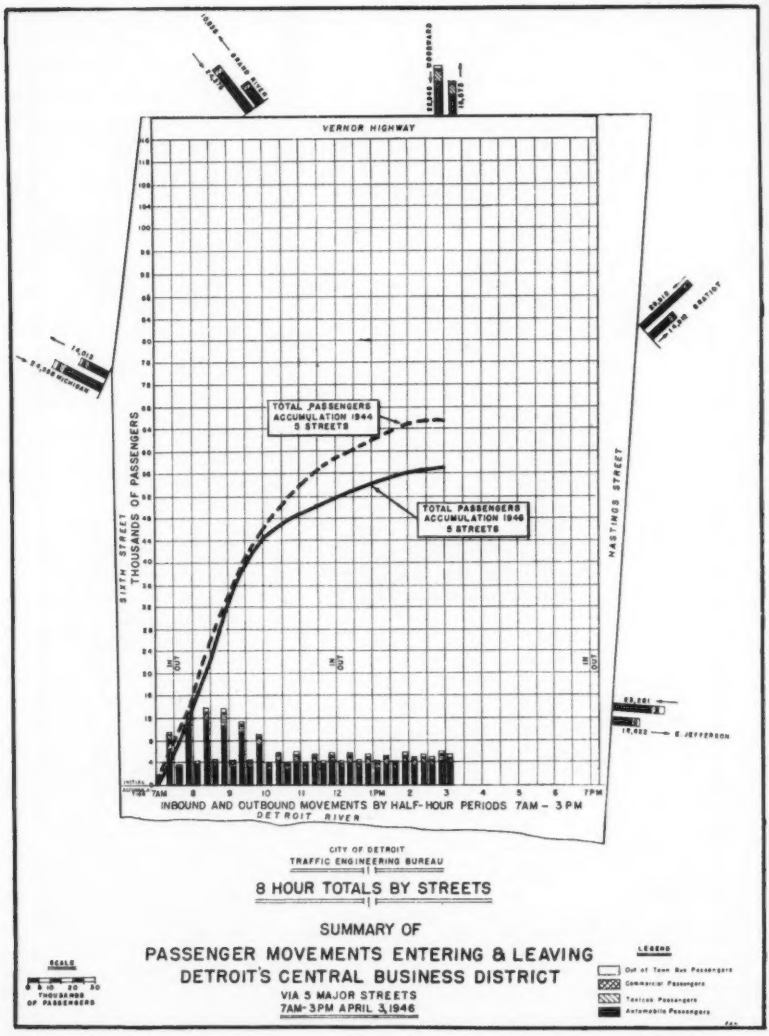
The effect of the transit strike on stores in the Central Business District was reported by Dunn and Bradstreet to be about the same as in the major neighborhood shopping centers. Monday, the first day of the strike, was reported to be the worst of the week, being about 50 per cent below normal. By Wednesday, conditions were reported normal, and here also, observers reported tremendous activity on Saturday. In addition, some of the large stores which maintained a personal shopping service did an unusually large amount of business over the telephone.

Detroit street traffic during the transit strike.




A comparison of normal conditions in 1944 with transit strike conditions in 1946.

Traffic counts were made on five of the major streets entering the central business district on Wednesday, April 3, the third day of the strike. The five streets were Michigan, Grand River, Woodward, Gratiot and Jefferson Avenues. All vehicles entering and leaving the Central Business District on these streets were recorded by half-hour periods between 7 A.M. and 3 P.M. The number of persons in each passenger vehicle was also recorded.




Showing comparison of normal passenger movements and passenger movements during strike.

The increase in passenger vehicle occupancy, compared to that in 1944, is shown in the following table:

| Street | Time | Inbound Persons Per Vehicle | | Outbound Persons Per Vehicle | |
|---|---|---|---|---|---|
| | | 1944 | 1946 | 1944 | 1946 |
| Grand River | 7:30 A.M. | 1.63 | 2.27 | 1.44 | 1.65 |
| Michigan | 8:00 A.M. | 1.72 | 2.68 | 1.45 | 1.52 |
| Gratiot | 10:30 A.M. | — | 1.96 | — | 1.65 |
| Woodward | 11:00 A.M. | 1.71 | 1.89 | 1.52 | 1.67 |
| Jefferson | 12:30 P.M. | 1.56 | 1.67 | 1.63 | 1.64 |
| Grand River | 2:00 P.M. | 1.59 | 1.80 | 1.47 | 1.76 |
| Michigan | 4:30 P.M. | 1.93 | 2:00 | 1.77 | 2.30 |

Both inbound and outbound occupancy was consistently higher during the strike than it was in 1944, with the largest increase during the morning inbound and evening outbound rush hours.

The data obtained from these 5 streets were compared with 1944 data for the same 5 streets, with the following results:

| | Oct. 26, 1944 | Apr. 3, 1946 | Change |
|---|---|---|---|
| Vehicles entering | 30,823 | 57,839 | Plus 87% |
| Maximum Accumulation | 10,742 | 17,995 | Plus 68% |
| Persons entering | | | |
| DSR | 94,985 | 0 | Minus 100% |
| All Other | 53,501 | 125,119 | Plus 134% |
| | 148,486 | 125,119 | Minus 16% |
| Maximum Accumulation of Persons | | | |
| DSR | 42,512 | 0 | Minus 100% |
| All Other | 20,497 | 57,103 | Plus 179% |
| | 63,009 | 57,103 | Minus 13% |

The 1944 Cordon Count showed that 64 per cent of all the persons entering used DSR street cars and buses. The reduction in number of persons entering during the strike could theoretically be 64 per cent. The actual reduction was 16 per cent.

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### SAINT LOUIS GOES INTO PARKING BUSINESS

The City of St. Louis went into the automobile and truck parking business on a portion of the side of the proposed Jefferson National Expansion Memorial project on June 6, under the general supervision of Arthur C. Meyers, director of streets and sewers. He expects the space provided will take care of 500 automobiles. The charge for parking is to be 25 cents a day between 7 a.m. and 6 p.m. There will be a staff of six men under the direction of a traffic inspector of the Department of Streets and Sewers.

The parking space was made available to the city through a temporary arrangement with the National Park Service, which owns the site.

# The Bottleneck of Traffic Flow

*by* BRUCE D. GREENSHIELDS, Ph.D., *Member, I. T. E. and* DONALD SCHAPIRO
*Yale University Bureau of Higway Traffic*

*The photographic method of traffic study was originated by the senior author, Bruce D. Greenshields, at the University of Michigan in 1933. In addition to the work with the Bureau of Highway Traffic at Yale Univercity, he is Adjunct Professor of Transportation at New York University and Associate Professor of Civil Engineering, Brooklyn Polytechnic Institute.*

*Donald Schapiro was graduated from Yale University in 1944, receiving an A. B. in economics. Since that time he has been assisting on the project.*

STREET intersections, focal points of congestion and delay, are commonly recognized as the bottleneck of traffic. Before corrective measures may be taken by the engineer charged with the expediting of vehicular movement it is necessary to understand the principles which govern and regulate traffic flow. Such understanding cannot be gained from casual observation, but rather must come from careful analysis of quantitative measurements. In contrast to laboratory research where rigid controls support an exacting scientific approach, this investigation of human and vehicle factors is characterized by their inherent variability. To cope with this difficulty the traffic engineer relies on the tools of statistics and the science of sampling. With these it is possible to obtain results sufficiently accurate to formulate theories which aid in explaining traffic behavior.

In order to gain further knowledge of traffic flow at urban intersections, the Yale Bureau of Highway Traffic initiated a statistical study of vehicular movement. From the beginning of the project it was apparent that the one essential attribute of traffic, relative motion, must be measured in terms of time and space between vehicles. Acceleration, signalized intersection capacity, minimum spacing between moving vehicles must all be explained in terms of relative motion as must the general laws which describe vehicular spacings on a roadway. The task was to observe them in the field and later to analyze the pictorial measurements of motion.

As a means of recording field data, pictures of traffic movement were taken at short successive time intervals. The equipment which was mounted on high buildings adjacent to intersections, consists of an Eastman Cine Kodak Special 16mm Camera with an auxiliary timing mechanism. One eighty-eighth minute was selected as the interval between exposures since it gives sufficiently accurate information while not retarding the work with unnecessary analysis. Furthermore, this interval is convenient since the distance traveled in feet in 1/88 minute equals the speed in miles per hour.

### Space Relationships

For measuring space relationships an obvious procedure would be to mark off the street and intersection areas by grid or scale lines so that they would appear in each picture and thus give the exact location of all vehicles. However, such lines would not only require considerable effort to paint, but they would undoubtedly attract the attention of motorists and might influence their behavior. To avoid the objection of the permanent grid lines

while accomplishing the same end, temporary guide lines in chalk drawn across the street at intervals of every twenty or forty feet were photographed. This picture served as a basis for a grid drawn on a "screen" of white drafting paper on which the successive pictures were projected for analysis. The grid on the screen serves as well as painted lines on the street as long as the pictures are "spotted" accurately. For ease in "spotting" the grid sheets are placed on a table so that they can be easily shifted and the pictures are projected downward.

In order to expedite analysis of the film, the normal projector equipment was modified: a slow-speed auxiliary motor was attached by flexible connection to the knob used for hand advancement of the film enabling the pictures to be run forward at any speed desired while a similar arrangement permits the projector to be reversed. As a further aid in recording and rechecking, a counter which advances one number per frame is included in each exposure. This arrangement of projector and counter not only increases many fold the data that can be transcribed, but makes for ease in studying one phase of driver behavior at a time.

The application of time-space study to traffic problems is illustrated by the procedure employed in analyzing one aspect of driver behavior. The starting performance of vehicles at urban intersections was observed and a description will be given of the technique used. The films to be studied are run through the projector rapidly and vehicles starting without hindrance (e.g., pedestrian interference) are selected. Information read from the films concerning a typical vehicle is tabulated below:

| *Time in* 1/88 *min. after light change to green* | *Scale position in feet* | *Speed in miles per hour* |
|---|---|---|
| 1 | 100 | 0 |
| 2 | 100 | 0 |
| 3 | 100 | 0 |
| 4 | 101 | 1 |
| 5 | 103 | 2 |
| 6 | 107 | 4 |
| 7 | 113 | 6 |
| 8 | 122 | 9 |
| 9 | 135 | 13 |
| 10 | 149 | 14 |
| 11 | 164 | 15 |
| 12 | 179 | 15 |

The exact position of the vehicle on the street is indicated, as scale lines are numbered on the grid onto which pictures are projected. Speed in miles per hour at any point is given since it is equal to the distance in feet traveled in 1/88 minute. In this example the driver starts movement 3/88 minute after the signal changes to green, and reaches 15 m.p.h. in 8/88 minutes. Such information when combined with similar data for other vehicles gives a curve of average starting performance. The same general procedure of reading films and recording data is employed in all phases of the study.

The first aspect of motorists' behavior investigated was the starting performance of motor vehicles. Observations were made in several cities of drivers' reaction times to the signal change and the characteristics of acceleration. Motorists' practices are similar at all the locations studied with one exception. At the intersections observed in New York City where a great many pedestrians were weaving in and out of traffic, the reaction time of drivers to a signal change is longer, and at all individual intersections it is found to increase directly with pedestrian volumes. Slower individual reaction time means greater delay to all, and intersection capacity is materially reduced. In addition to its safety value, rigid pedestrian control is indicated as a means of decreasing congestion.

The capacity of a signalized intersection was measured in this study by

determining the time-space headways between successive entering vehicles. After the light changes to green the entrance headway time required per vehicle is found to vary from two to four seconds. The first few vehicles in line consume more time than the others since the former start from rest while the latter have accelerated to normal speed before reaching the intersection. For this reason, longer "go" periods pass more than a proportionately greater number of cars. However, lengthy "go" periods on one street mean long "stop" periods on the other street, and accordingly increase total delay. Optimum timing requires the shortest signal cycle which will accommodate the existing traffic, and the quantitative results of this study may be used for such a determination.

**Types of Vehicles**

On entering an intersection all types of vehicles do not perform alike. For example, trucks in general take 1.5 times as long as passenger cars. A truck may therefore be said to equal 1.5 passenger car "units." The ability to reduce the heterogeneous mass of vehicles to like "units" implies that the quantitative value of various traffic factors may be measured and related to one another. Units of measurement, or lowest common denominators, are extremely common in other fields. To borrow an illustration from every day life, a loaf of bread sells for ten cents: thus ten cents becomes a measure of its value. This analogy may be extended to traffic at signalized intersections. Instead of loaves of bread, time is on sale. In this study the green interval of the traffic signal has been apportioned among three demands:

1. Passenger vehicles
2. Other vehicles (i.e., buses and trucks)
3. Left turning movements

The questions to be answered are: first, how much intersection green time does each consume, and second, how are these consumptions related to one another? Data on hand concerning performance makes it possible to tentatively define and measure the traffic "units." Simplicity is gained by measuring the "units" of the traffic stream rather than thinking of it as composed of various vehicles of different types. The advantage of such units becomes apparent when it is desirable to adjust signals for variations in the volume and composition of traffic or for the proportion of left turning movements. Congestion will be avoided as long as the number of traffic units delivered to the intersection per cycle is less than the intersection can handle.

After starting vehicles increase speed, their effective length increases as well. While stopped, vehicles are separated by four or five feet but few drivers travel so closely when going at higher speeds. The minimum distance clearance between vehicles increases directly with their speed. In contrast, time clearance between vehicles is constant at about one second. In other words, while traveling at twenty-two feet per second, minimum distance headway is about twenty-two feet and at forty-four feet per second, minimum distance headway is approximately forty-four feet. Since perception-reaction time is about one second, this would suggest that drivers feel that they can come to a stop as quickly as the car ahead and allow only a reaction time spacing.

At many intersections the volume of traffic does not warrant signalization, and other forms of control are employed. The "stop sign" is the most common of these other regulations and as such merits some investigation. Observations were made to determine the minimum "gap" in traffic required to allow the passage of a vehicle on the "stop" streets. The results of this investigation show that on the average a clear spacing of about six seconds

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is needed. Therefore, in order to determine delay for the stopped vehicle, it is necessary to ascertain the number of such gaps appearing in opposing traffic.

For this purpose, as well as for many others, it is desirable to determine the law which governs the spacing of the traffic on a roadway. Highway traffic does not distribute itself perfectly evenly along the road; there is always some degree of vehicular bunching. The spacing relationships that exist in traffic streams as they move over our streets and highways have been found to conform closely to Poisson's law of "random series." Using this mathematical tool, the analyst may predict within close limits, for example, the delay suffered at intersections, either "stop signed" or signalized. To determine the reliability of such work, the theoretical delay at a signalized intersection was compared to delay actually observed there in other investigations, and no significant difference was found. Poisson's law may also be applied to various other computations in traffic, and its use is of considerable practical and theoretical importance.

In summary, perhaps the most significant thing to come out of the entire study has been the fact that the time-spaced relationships found in traffic tend to follow definite statistical patterns. Individually there may seem to be little rhyme or reason to the action of drivers and the movement of vehicles they drive, but collectively they tend to obey certain logical principles. Recall that "Logos" (logic) was used by an ancient Greek philosopher to explain how life could consist of motion and yet be orderly and harmonious.

Theoretical principles, however correct, are of only academic interest until observed data have proved them right in practice. The present investigation has demonstrated that apparatus and techniques may be developed to measure the rapid kaleidoscopic changes taking place in traffic, particularly at street intersections. With such measurements, it is possible to support and prove the hypothesis which may be used to make the best of existing traffic facilities and to determine when, outgrown and outmoded, they should be replaced.

# The Parking Problem

*by* DANIEL W. WALLS
*Binghamton, N. Y.*
*Copyrighted, 1946*

EDITOR'S NOTE: *Here are presented excerpts from the writings of a businessman who has some very thought provoking ideas to offer on the Number One city traffic headache of our era.*

A BROCHURE, *Practical Suggestions for Obtaining Off-Street Parking* sponsored by the American Retail Federation, under the title, *"Keep Customers Coming"* makes this pointed suggestion:

"If an existing committee is of the 'sitting-bull type' put new life and blood into it."

### Why the Bull Sits

Now, although the above suggestion is a good one, I am whole-heartedly in sympathy with this "sitting-bull committee." Having delegated myself some two years ago as a committee of one to the study of this problem, I know exactly why the bull is sitting and what is required to administer the

tonic of new life blood into his veins. First of all, it will be necessary to tear down the wall which is fencing him in, give him a gentle hint in which direction to go and then see what happens.

In the story which follows, an attempt is made to tear down this fence and point the way to green pastures. In other words, having been enriched with the knowledge to be gained by a thorough study of the problem of parking, and having come to know what the difficulties are, to be encountered by a layman, or a lay committee, in approaching the problem with sufficient understanding necessary to make a start and keep going in the right direction, it is hoped this story which is an analysis of the problem will help to show the way.

**Parking — The Monster**

As early as 1920, the news items began to appear in the papers, in one city after another, announcing that some civic group "had appointed a committee to study the growing problem of parking."

Today: twenty-five years later, parking has grown to Goliath-like proportions which defies all attempts to find a satisfactory remedy. The demand for parking space is insatiable; the adverse effects which it exerts on central city property and business, makes it appear that, at last, we have come face to face with one instance of an irresistible force coming into contact with an immovable body.

People everywhere, both citizens and officials, are beginning to view the present situation with much concern. Indeed, at least one writer of authority, J. L. Sert, has titled a book, *"Can Our Cities Survive?"*

American ingenuity, however, has never failed to meet the occasion, whatever it may have been. And, in the ever increasing interest of the people, now being shown toward working out solutions to these many problems, which may seem vexing, can be seen favorable signs indicating that the future will be secure. Obviously, these problems have come about as the result of advanced knowledge and improvements in everything that concerns our way of living. Individually, we have accepted and adapted new modes and styles, but, the framework in which we live and work—the physical make-up of the city, cannot respond with equal freedom and ease; the roots go down too deep.

**A Matter of Time**

For the most part, these problems posed in reshaping the new uses of land and public services, to meet these new demands, are within the jurisdiction and control of various civic agencies and commissions which means that, the attuning to modern improvements and methods is merely a matter of direction and reasonable time, sufficient for acceptance by the public, of changes from the old to the new.

The automobile is the new mode of travel and the moving of goods which bids fair to exert powers that will, eventually, bring about a very noticeable change in the pattern, and use of abutting land, and highways over which it travels. This, too, is being studied and developed under the directing hands of skilled highway engineers and competent town planners. But, parking is something else again; its needs are immediate and there is now no established agency or municipal department whose responsibility it is to develop, or devise a plan, or solution, unless it be the awakened interest of the citizen, working through the Chamber of Commerce, and other civic bodies.

**Decentralization**

Within the past ten to twenty years, the pressure for business and industrial locations in the central area of American cities has lessened considerably. In response to the demands for parking space, large stores have been set up at focal points in outlying sections around which new business centers

have sprung up. Industry, too, has moved out to the perimeter, if not beyond the city limits, where now can be seen new and thriving satellite towns.

The ultimate result of this relocation of values in the spreading of industry, of business and population, toward the outer rim, is to spread the customary municipal services, which adds to the overhead, or annual budget; which must in turn be raised by taxes shifted from the old part of the city to the new.

There is considerable consolation in the fact that there is a very noticeable increase in the number of people in varied walks of life, both official and plain citizens, who are taking a keen interest in traffic, parking and other urban problems and are seeking light on ways and means to develop programs designed to solve them. This is highly significant in that it is through these people, the great and small, that the process of democracy must be directed against the barrier surounding these various problems in order that the right solution can be evolved. The technicians—traffic engineers and city planner, know the facts and can give advice, but, no such changes as will be required in our civic structure can be accomplished unless it comes up from the people themselves.

**Public Transit**

This changeover from a method of common carrier to that of the individual automobile cannot be dispensed with too lightly. The difference in social limitations and physical demands on the business area create a new economic factor which is of great importance.

When mass transportation was the mode of travel people could only go in the direction which the rails led, and this was usually to the center of town, where each car brought its load of people and then passed on to return for another. There were no requirements for parking. Only people filled the town.

The automobile has changed all this; people can now start, and go when and where they will. They are not fixed to rails and cannot alight near any store where there is not an appropriate place to park. The number of people who now enter the business area are determined by the acceptability of mass transportation and the number of private cars that can find a place to park.

When these things are understood and their relative importance defined, it will then be seen that what we are pleased to look forward to as a solution, will not be the solution at all, that is, in the sense of prevailing opinion. The solution when it does evolve, or dawn upon us, will be one of an unfolding plan and continuing policy instead of a hit or miss palliative. It will not come hurriedly, but will develop and be adapted gradually, under administrative methods, evolved to meet the requirements of the city in question, and with due consideration given to predictable demands of the future.

**City Parking Lots**

It is a very simple matter for us to assume that the city officials, or the planning commission, acting through the city council, should provide the facilities to take care of parking as the demand arises. Of course, if parking congestion should become an emergency, some such steps may become compulsory to meet it, but, this method as yet, is not the accepted procedure. A great many cities have assigned available lots for parking purposes and many have spent considerable sums of money in acquiring lots, which, in effect, is more or less of an interim measure to meet the desperate situation pending the envolvment of a more comprehensive plan. These city owned, or city controlled lots are, in

most cases, open to free parking. This, together with free curb parking, has its effect in discouraging the use of private lots where a fee is charged. The general effect is an inadequate service for which the local economy pays a high price.

The one big hurdle to be overcome before any semblance of a solution begins to emerge, is a unity of agreement between the citizen and the city official, regarding what policy or policies shall be accepted as the correct procedure necessary to integrate the various factors into a tangible form necessary for administration; whether it be municipal, a private corporation, or a combination of administrative interests.

**Parking Is A Vital Service**

As champions of laissez faire, we have failed to take into account that the problem has taken on aspects wherein it has ceased to be one of selling so much space as a competitive commodity, as you would sell a sack of flour, a hat or a necktie, and instead, has taken on the precepts of a service which is of a very vital economic import to the municipality as a whole. Any profits which might accrue from the act of catering to parking needs are merely incidental to a service which must be rendered. A place to park is a contiguous part of the city streets; and, is even more important, for, if the car cannot be parked, how can the purpose for which the trip was made over the streets be completed. The import of this is, that the potential customer—the basic economic unit of the community, is no longer limited to any one particular shopping center. A few minutes spent to drive a few more miles where acceptable parking facilities are available is a much more compelling sales argument than is the risk of a police tag or the parking confusion and delay encountered where ample and acceptable parking is not provided.

It would be branded as foolhardy to expect to build and maintain a thriving city by delegating the location of the streets to chance, their design and maintenance to the voluntary initiative of unregulated private interest; and yet, if we but stop and examine the situation, it is immediately apparent that the very purpose for maintaining costly streets—the arteries of the city—are being defeated because we are waiting for the intrepeneur to provide the means to relieve the jam packed vehicles so the stream can flow.

**The Missing Link**

The connecting link between the data assembled, as the result of surveys and studies made, and the application of this data to a plan of operation is the link which is still missing. Technology has so improved other forms of development in the realm of mankind that utility of the automobile in urban areas is often-times curtailed more than one-half, because developments to facilitate its use are so far behind. When a link to encompass and bring together these two factors, is found, the problem of parking will have been solved. A review of reports made from surveys and studies of the past, reveals that this point has been shied away from, like an unwanted step-child.

**Detroit Example**

For example: The following information is taken from a paper by Lloyd Reid, Traffic Engineer, City of Detroit, as reported in Proceedings of the Second New England Traffic Engineering Conference, July, 1944:

Early in the war, an able "Street Improvement Committee" in the City of Detroit, conducted a survey and study of traffic and parking; from this study the report states: "A very promising network of expressways was planned." In addition, the report covered in detail, the need for off-street parking. Sites were mapped, and financing, down to the earning require-

ments per car stall was figured, both for public and private operation. The report continued: "Proposals of this network of expressways for Detroit was made to the mayor. The mayor, in turn, presented it to the Common Council which adopted it." The report on parking concluded as follows: "These general studies have convinced us that it is economically feasible to construct and operate structures within convenient walking distances of any point in the downtown area." The above report on parking is very similar to reports made by traffic, parking and city planning committees in other cities.

In concluding the case history of the Detroit parking report, the following quotation appears on page 105 of the January, 1946 isue of *The American City*. It tells its own story.

"Detroit—Lack of parking facilities and the resultant traffic congestion has cost property owners in downtown area about $1,000,000,000, according to estimates made by the Detroit Traffic Engineering Bureau. In 1944 there was a shortage of 2,000 car spaces and the figure is expected to be 5,000 by 1950. This is given as one reason for the location of business centers on the city's periphery, which reduced assessed values in the downtown section from $3,000,000,000 in 1934 to $2,000,000,000 in 1944. Now under consideration is the construction of an underground parking space."

A further report from Detroit implementing the above, is to be found on page 208 of *Traffic Engineering*, March, 1946. It reads: "poorly located private garages have not done well. A charter amendment gives council power to finance, maintain and operate parking facilities."

The history of parking in Detroit, could apply very well to most any other American City. The only difference might be in adjusting the figures to suit the relative population and basic economy. These figures, as they apply to any city, are a matter of record, on file with the city clerk. The annual assessment of property values minus the valuation of new construction, as shown by building permits, for ten or fifteen years back, will tell the story. It is to be noted, however, that in Detroit, the trend is under way, and, at the fall election of 1945, eighty-two percent of the votes cast, approved the issuance of revenue bonds for the construction of an underground garage of, at least 1000-car capacity.

**Los Angeles Project**

Another noteworthy project is going forward under the leadership of the Downtown Businessmen's Association of Los Angeles. According to a very attractive and well illustrated report issued by them, their studies are going forward on the basis of traffic requirements over the entire metropolis.

It is of interest to note that the Downtown Businessmen's Association lists in their report, which is profusely illustrated with large traffic flow maps and parking areas, the following personnel: Sixty officers and members of the Board of Directors, among which, six banks and four newspapers are represented. The transportation and parking studies are headed up under a directing committee, supported by seven sub-committees, staffed by a thirteen-member advisory board, and the assistance of the Regional Planning Commission of Los Angeles County. The report indicates a wide spread and well supported program which is necessary to assure success.

The foregoing examples illustrate the trend which is under way. In it can be seen the recognition that a place to park is a necessary adjunct to unrestrained transportation and, as such, the parking problem must be approached on the basis of its economic implications to the community

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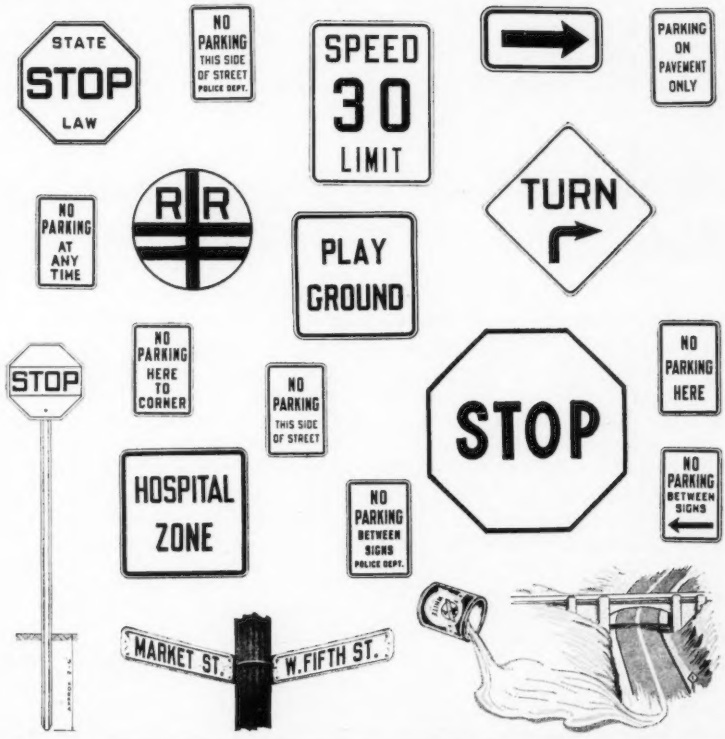


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## CATALOGUE AND PRICES ON REQUEST

as a whole; the importance of its facility in consummating the so-called "American Standard of Living"—the better life. Freedom of transportation is the bulwark, a fundamental to the economic base of the urban community and any restraint put upon that freedom reacts negatively to the same degree.

**Some Questions to Ponder**

The following questions are a matter of civic concern for all of us as individuals to think about:

Who creates, or generates the problem? Who benefits by the use of the automobile as a means of transportation, in the moving of people and goods? And, of the greatest importance, who stands to lose, if the use of the automobile is curtailed in its use, due to congestion and delays caused by a greater demand for moving cars, and the parking or storage of cars than the streets can accommodate?

The answer to the above questions holds the key to the responsibility for finding a solution. And, since it is obvious that cooperative action must precede a solution it is important that such action shall not be delayed.

# Accident Increase Brings Insurance Hike

*by* E. C. Powers, *Director*
*The Street and Traffic Safety Lighting Bureau*

Two closely related news items appeared in the daily press on the same day recently.

One item said: "More persons lost their lives on the nation's highways last month than in any April in History."

The other item stated: "Bodily injury insurance rates have been increased 20 per cent in 29 states and property damage rates are up 25 per cent—both effective on policies written on and after May 27.

Which is just another way of saying, "Americans not only pay for their traffic shortcomings with their lives and painful injury, they pay for them with good, cold, hard cash—in this case to the tune of from 20 to 25 cents more on every dollar they spend on bodily injury and property damage protection in their automobile insurance.

If the O.P.A. or manufacturers or labor caused a 25 per cent increase in the cost of living in any one day, or month, there would be a nation-wide complaint that would rock the halls of Congress.

But a 25 per cent increase in insurance rates, caused by a combination of carelessness and recklessness on the part of motorists and pedestrians, plus a lack of adequate traffic safety facilities, rates only casual mention and causes only a ripple of anxiety.

The news item on accidents goes on to state that, according to statistics compiled by the National Safety Council, 2,650 persons died in automobile accidents during April, a toll 47 per cent greater than the total traffic deaths in April of last year, and one per cent higher than the same month of 1941 when reckless motorists set an all-time record for traffic fatalities.

The insurance item states that the increased rates undoubtedly will rise in the other 19 states, too.

## COUNTIES Solve
## Traffic Problems With
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The Traficounter is used by scores of county highway departments throughout the country. Here is a typical comment, from the office of a county highway engineer regarding the excellent use being made of these precision built instruments.

"We have four Traficounters and find that they are a great help in getting continuous traffic count of certain sections of road. Our County road system is surfaced largely with pit run gravel and we have now reached a stage where—in our Post-War construction—we will have to do considerable regrading and bituminous surfacing.

"Traffic counts taken before gasoline rationing are proving valuable in determining what roads should be included in this program from a traffic standpoint."

This "lightning fast" automatic counter of motor traffic consists essentially of an electric counter and recorder which registers the count of cars that pass the detector. **Streeter - Amet Company, 1726 Belle Plaine Avenue, Chicago 13, Illinois.**

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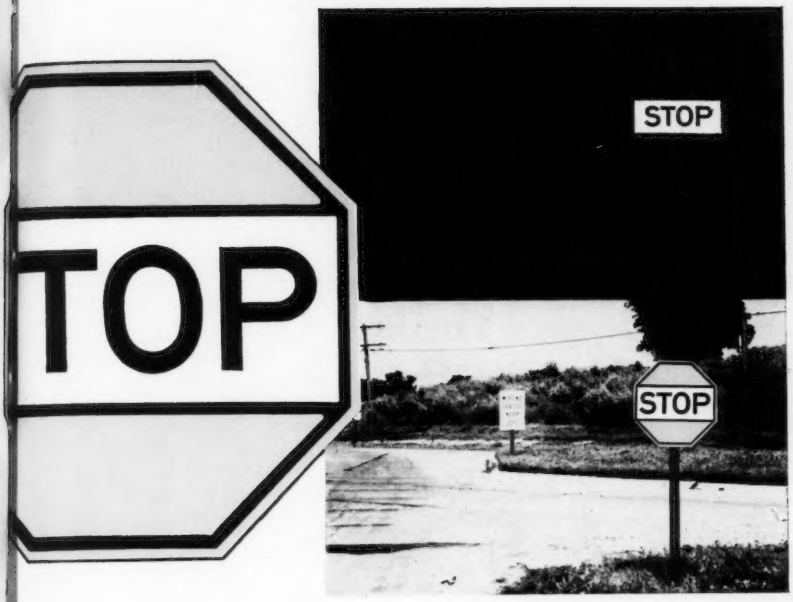


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It should be borne in mind that insurance cost is the minimum burden borne by those who *escape* traffic accidents. Those who do not escape pay the insurance cost, too, but they also pay other costs including their lives, possible permanent injury which in most cases deprives them of their means of livelihood; temporary injury and attendant pain and inconvenience. The least that can be expected is damage either to the automobile, the driver, or the person struck by the auto.

Two out of every three fatal traffic accidents occur at night and a substantial percentage of these can be laid either directly or indirectly to the absence of modern traffic safety lighting. One significant fact about these night accidents is that they reap a large toll of pedestrian lives, principally because inadequate street lighting does not permit the motorist to see them in time to avoid hitting them.

There has been much progress in street lighting particularly in the metropolitan centers, in recent months. The Street and Traffic Safety Lighting Bureau points out that Chicago has already begun an $8,000,000 program in behalf of modern traffic safety lighting. Numerous California cities have recently announced individual programs to reduce night time accidents. Detroit has made notable progress in this direction and the experience of New Jersey, Hartford, Salt Lake City and Houston are already well known.

But insofar as the nation as a whole is concerned, only the surface has been scratched. Traffic experts estimate that a minimum of four million new luminaires of modern street lighting for 50,000 miles of thoroughfares and 250,000 miles of residential streets, at an estimated installed cost of a half billion dollars will be needed in the next ten years. This is for both new and replacement lighting.

It doesn't take many 25 per cent increases in insurance rates to total a half billion dollars.

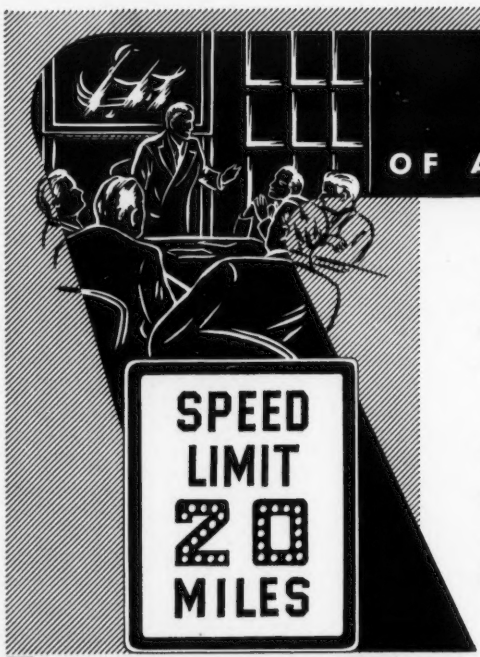
—*Street and Traffic Safety Lighting Bureau*

## OHIO WINTER PLANS USE ROCK SALT

Getting set for winter in August, the Ohio Department of Highways has worked out a system for storing rock salt that enables it to keep state roads safe for travel in spite of emergency situations created by sudden ice and snow storms, according to information presented at a meeting of district managers of the International Salt Company, Inc., held at Shawnee on the Delaware to discuss plans for greater highway safety this winter.

In July and August the Department requests its 12 division engineers to report on their requirements for the coming season, giving amount of stock on hand and estimating their needs for the months ahead. As soon as these reports are received the Department prepares state wide estimates and places orders immediately for at least 75 per cent of its winter requirements of rock salt. Deliveries are made as early as September, and by October the state is set for whatever winter storms come along. Because of such early ordering, division engineers can handle emergencies the moment they arise out of stock on hand, and motorists throughout the state get safe roads immediately after a storm, with no delays caused by lack of snow removal equipment and supplies.

In storing 75 per cent of its winter rock salt needs, the state puts as much of it as possible indoors and the rest




# SIGNS

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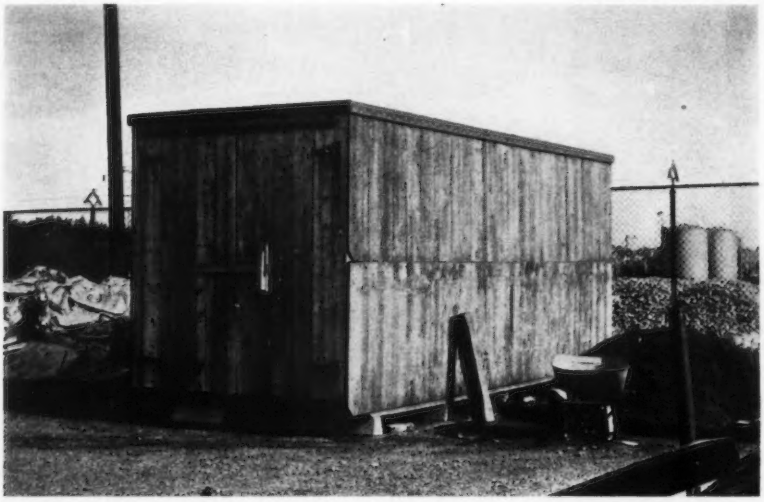

Two crates 3½ feet by 6 feet by 18 inches fastened together to make a rock salt storage box to be used this winter by the Ohio Department of Highways. Trucks can be loaded from it by hand or by a small conveyor hauled up to the open door.

outside. Outside storage is a simple matter to arrange, for the salt is often just dumped on hard ground and covered with a tarpaulin, with very little loss from the weather.

In addition to ordering rock salt early, Ohio engineers also check upon trucks, plows and other equipment in the fall to make sure that everything is in perfect working order to handle emergencies as they arise.

Two hundred pounds of rock salt are ordinarily mixed with every cubic yard of abrasives when they are stock piled and another 200 pounds per cubic yard are added just before they are used.

★ ★ ★

## ACCIDENTS SOAR

The nation piled up a traffic toll of 15,750 killed and 540,000 injured in the first six months of this year, the National Safety Council reported today.

This is 40 per cent greater than the toll for the same period last year, when wartime restrictions prevailed, the Council said.

The traffic death toll for June was 2,510—27 per cent higher than a year ago.

Despite these increases, the Council believes the traffic accident picture is more encouraging today than at any time since V-J Day, for these reasons:

1. In the first four months of this year the traffic death toll ran neck and neck with the all-time high of pre-war 1941. But in May of this year the toll took a sudden dip of 21 per cent below the May total of 1941, and stayed down with a 19 per cent drop in June from the 1941 level. As a result, the six-month toll for 1946 was 8 per cent below that same period in 1941.

2. The 27 per cent increase in traffic deaths this June over June of last year, big as it was, wasn't nearly as great as the increases over 1945 reported in the earlier months of this year.

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# YALE AWARDS TRAFFIC ENGINEERING FELLOWSHIPS

Awards of ten graduate Fellowships in Traffic Engineering were recently announced by Yale University. These Fellowships provide a stipend of $1400 each and enable recipients to engage in a full academic year in graduate study in Traffic Engineering at the Yale Bureau of Highway Traffic. Scholarships providing for the payment of tuition fees were awarded to an additional four men.

Fellowships were awarded on the basis of education and experience records of candidates. Preference was given to those men now employed in street and highway engineering. Six of the recipients of Fellowships are veterans of World War II. The ten Fellowships were made possible through a grant to the Yale Bureau of Highway Traffic by the Automotive Safety Foundation.

"The wide interest in the Fellowships and the support of traffic engineering training indicates the importance attached to traffic engineering by public officials," said Mr. Theodore M. Matson, (Member, Institute of Traffic Engineers), Director of the Yale Bureau of Highway Traffic, in announcing the awards. More and more specialized treatments are being applied to cope with traffic and parking problems which are daily becoming more acute. In some sections of the country motor vehicle mileage is already as much as thirty percent in excess of pre-war levels, even in spite of the smaller number of cars on the road. The cities' problem is even more acute. Records show that half of all miles of motor traffic in America takes place on city streets which make up only ten percent of the total mileage. These two facts alone make apparent the traffic problem which the cities of America will have to face in the near future.

"The training which will be provided not only through the Fellowships, but also to those students who take advantage of tuition scholarships, and others who enroll, is therefore particularly timely," said Mr. Matson.

The course of study which will be undertaken at Yale is at a graduate level and deals with the engineering phases of street and highway operations. It is aimed to develop keen analytical ability on the part of the students in dealing with highway traffic problems. It provides opportunity for each student to carry on original research in some particular phase of traffic engineering.

The ten Fellowships were awarded to men from seven states. Eight of the men are employed in state highway departments, one is attached to the Traffic Engineering Division of a large city, and another is just released from the army. One of the men awarded a tuition scholarship is from Canada and another from the Philippines, the other two are from the state of New York.

### Names of New Students

Men awarded Fellowships are: James B. Clark, Olympia, Washington; Webb J. Crecink, Jackson, Mississippi; George Hill, Fresno, California; J. L. Holley, McBean, Georgia; John H. Hulse, Manasquan, New Jersey; A. L. Hutchison, Burbank, California; Emrys S. Lewarch, Seattle, Washington; Robert E. Schmidt, Snyder, New York; Arthur M. White, Jackson, Mississippi; and James R. Wichman, Lansing, Michigan.

Men awarded tuition scholarships are: Anselmo T. Alquinto, Philippine Islands; Ralph G. Champagne, Troy, New York; Herbert J. Klar, Lynbrook, New York; and Murray Zides, New Brunswick, Canada.

Mr. Matson explained that in addition to students receiving Fellowships

and tuition scholarships, the courses offered by the Bureau of Highway Traffic at Yale will be attended by other qualified engineers. Applications for admission to the courses have been received from a number of returning servicemen and a capacity enrollment is expected, with a large percentage of the class receiving benefits under the G. I. Bill of Rights.

## CONGESTION RELIEF BY OVERPASSING A TRAFFIC CIRCLE

The complex nature of the program of handling the ever increasing volume of traffic on our highways is forcefully brought home by the scope of a contract with F. A. Canuso & Son of Philadelphia. This firm is modernizing a traffic circle near the Camden, N. J., airport, at an intersection which has been swamped by a 58,000 average daily and 90,000 peak traffic. The cost of this improvement will be in excess of $700,000. An outstanding feature of the job is the fact that construction is carried on in such a manner as to interfere very little with the heavy flow of traffic now using the circle.

The existing circle, completed in 1925, embodied a very forward-looking design as is borne out by its adaptability to a solution fitting present-day conditions. The first and still the largest highway traffic circle in the state, it has an inside diameter of 300 ft. and a 40-ft. roadway. Located two miles east of the Admiral Wilson Boulevard Bridge across the Delaware River, the circle handles Camden and Philadelphia traffic to and from the shore points and Garden State race track. In addition, it serves N. J. route 25 (U. S. 130) which is the heavily traveled by-pass highway connecting New York with points south.

### Combined Circle and Y

The modified design is such that the capacity of the original circle will be increased due to the relief afforded by the new features. Wherever the new structure or its approaches encroach on the original layout, the old pavement is being widened a corresponding amount.

The improvement consists of a Y-shaped structure of three 34-ft. roadways and is essentially an overpass built above the circle. The stem, or westerly section of the Y, ties into the center of Admiral Wilson Boulevard about 500 ft. from the circle. An earth-fill ramp, confined by reinforced concrete walls, carries this roadway to an elevation of 14 ft. above the circle pavement. Bridge-type construction is used where the roadway crosses the circle. The center portion of the Y is earth-fill. The left-hand fork of the Y ties into route 38 running east while the right-hand fork ties into route 45 leading south. The completed work can well be described as a Y above a circle.

### Control Scheme for Commuter and Outing Traffic

The one-way traffic principle, using traffic lights, will be used to control traffic using the Y. East-bound traffic will be allowed to enter the Y only from Admiral Wilson Boulevard and can leave it by either route 45 or 38. West-bound traffic for Camden or Philadelphia will enter the Y from either route 45 or 38 and can leave only by way of Admiral Wilson Boulevard. The Y will be used exclusively by east-bound traffic at such times as the predominate amount of traffic is going that way. West-bound traffic will take precedence whenever the

volume of traffic warrants as will be the case when the week-end crowds are returning from shore points, when race-track crowds are returning home, or when there is an early-morning influx of workers to Camden and Philadelphia. The use of the Y, however, will always be optional with the driver and he may use the circle if he so desires. The over pass structure does not call for any change in the present one-way traffic pattern around the circle.

—*Roads and Streets*

## YOUNGSTOWN TO GET TRAFFIC SURVEY

A detailed survey of parking conditions will be undertaken this fall in Youngstown, Ohio to produce data for a study of the city's parking problem not only in the main business district but in congested outlying districts as well. The survey will be under the supervision of the Division of Traffic and Safety of the Ohio Department of Highways and is being sponsored by the City of Youngstown, Mahoning County, the Greater Youngstown Area Foundation and the Youngstown Municipal Railway Company.

**Traffic Studies**

The survey will encompass a study of existing and probable future curb and off-street parking facilities as well as modes of transportation and vehicular storage used by customers of several of Youngstown's larger stores, office buildings, and theaters.

In addition, vehicular and pedestrian traffic counts will be taken around a predetermined cordon of the main business area to determine the demand for parking accommodations and to indicate the degree of use of other transportation facilities.

Administrative and engineering personnel for the survey will be furnished by the City, County and the Municipal Railway Company. Boy Scouts will be used to gather the field data and to compile statistical information.

Planning and general supervision of the survey will be done by Harry Neal, (Mem. I.T.E.), Chief Engineer, Ohio State Division of Traffic and Safety.

The entire study is expected to require three months and the coordination of the program will be under the direction of an engineer assigned by the City. His office has already been established in the City Hall.

According to Neal, need for the traffic and parking survey has been felt for some time, and it is believed that Youngstown's parking problem, long complex, will become even more serious in the near future. Business men and public officials feel that the survey will point the way to a possible solution to the problem. The entire program is designed to meet near-term needs and to meet anticipated requirements of many years to come.

★ ★ ★

**NOW IT CAN BE TOLD**

For almost a year following Pearl Harbor all street lights in Hawaii were extinguished. In the first 4 months traffic accidents rose almost one a night over the 4 months immediately preceding the blackout—despite reduction in number of cars on streets. The blackout went farther than the streets and affected the private lives of the citizens. According to a doctor it was responsible for "many ill effects on the health and morale of the people." Later, need for relief became so urgent that restrictions were rescinded.

# DUAL...the meter that's RIGHT up to the minute!

DUAL—America's original automatic parking meter—has maintained its leadership in the field with continuous improvement of design and mechanism to serve more cities, more efficiently.

During the years when war production suspended the manufacture of meters, Dual engineers were on the job. They worked out many improvements to increase the over-all efficiency of Dual Automatic Parking Meters. Today, the new Duals are better than ever—ready to help you solve your increasing parking problems.

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WHEN IT COMES TO CONTROLLING PARKING
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# OREGON TRAFFIC ENGINEERING COURSE ATTRACTS MUCH INTEREST

Thirty-four men from six western states attended the two week Traffic Engineering Course held recently at Oregon State College. This course was given by the Yale Bureau of Highway Traffic as a part of the Eighth National Institute for Traffic Training. Twelve cities, two counties and two safety associations were represented.

"The large enrollment and the high enthusiasm of all the men attending the course reflect the interest of officials of the western states in current traffic problems and highway programs" said Wilbur S. Smith, Director of the course. "Interest in the course certainly indicates that traffic engineering techniques and principles will be applied in the planning and construction of new highway facilities, in both urban and rural areas, as well as in the operation of existing streets and highways."

The course of instruction provided lectures by Messrs. Theodore M. Matson and Wilbur S. Smith of the Yale Bureau of Highway Traffic on basic elements of Traffic Engineering during the morning sessions. Students were acquainted with methods of traffic analyses and survey techniques, devices employed in traffic regulation and control, procedures followed in planning for traffic relief measures, and elements of functional design of traffic facilities. The afternoons were given to panel discussions and seminars on such current traffic activities as urban planning for traffic facilities, state aids to cities for traffic planning and operations, the conduct and application of origin and destination surveys, off-street parking problems, and the coordination of traffic control.

Many key persons from the West Coast participated in the seminars and panels. They included:

Messrs.: R. H. Baldock, Chief Engr., State Highway Dept., Salem, Oregon.

W. A. Bowes, Commissioner, Dept. of Public Works, Portland, Oregon.

George W. Howie, Asst. Traffic Engineer, Portland, Oregon.

J. A. Davis, Chief Engr., State Highway Dept., Olympia, Wash.

G. D. Kennedy, Vice Pres., Automotive Safety Foundation, Washington, D. C.

F. B. Crandall, Traffic Engineer, State Highway Dept., Salem, Oregon.

F. T. Fowler, Traffic Engineer, City of Portland, Oregon.

D. L. Trueblood, United States Public Roads Administration.

D. E. Morris, Traffic Engineer, State Highway Dept., Olympia, Wash.

J. W. Arch Bollong, Traffic Engineer, Seattle, Washington.

Winston H. Carsten, Asst. Traffic Engr., State Highway Department, Wash.

W. Weller, Transportation Engr., Dept. of Public Utilities, Portland, Ore.

J. A. Head, Asst. Traffic Engr., Highway Department, Salem, Ore.

R. E. Dunn, District Traffic Engineer, State Highway Dept., Olympia, Wash.

F. H. Wynn, Traffic Engineer, Honolulu, T. H.

B. W. Marsh, American Automobile Association, Washington, D. C.

D. S. Berry, National Safety Council, Chicago, Ill.

E. Campbell, National Safety Council, San Francisco, Calif.

A number of other local officials participated.

One day was devoted to a field trip to the Highway Department in Salem, Oregon and to the Traffic Engineering Bureau of Portland.

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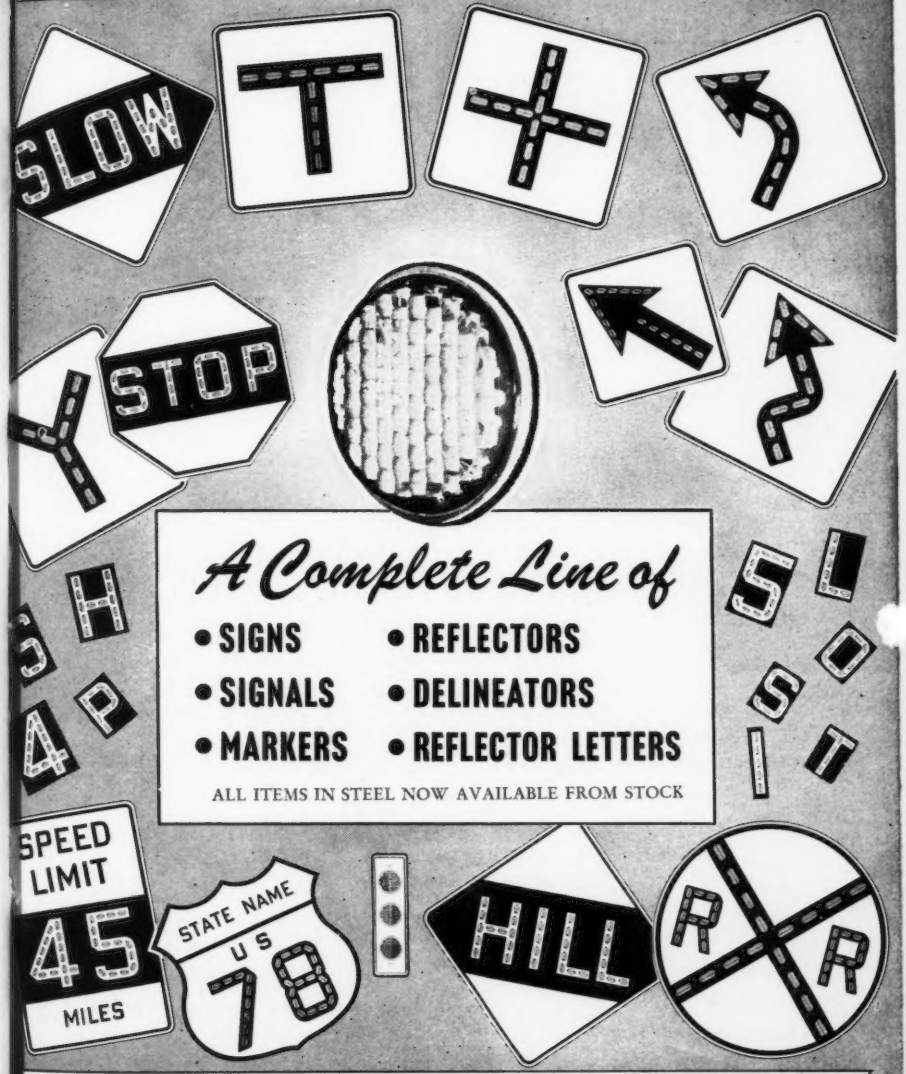


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# ITE NEWS AND PERSONALS

## ITE CONVENTION SITE POPULAR

Columbus, Ohio, is the best convention city in America, the travelling men themselves voted in convention recently, naming also some other first annual awards to municipalities from views of pulchritude, urban transportation, hotels, and food. The selections made by UTC were revealed in a broadcast over the Mutual Broadcasting System. Columbus is the site of the Annual ITE Convention to be held Oct. 3, 4 and 5.

Denver was judged from general transportation facilities, hospitality, hotels, food, and the attitude of merchants. Other awards named specific reasons for selections.

The best hotel town in the opinion of the travelling men, who say they are in a position to know, is St. Louis, Missouri. The best urban transportation is the fumeless, noiseless trolley coach as a preference over gas busses and street cars, and to prove it, the sample case toters named Columbus, Indianapolis, and Milwaukee, where the trackless trolleys are widely used.

The best food is located in San Francisco, the travellers decided. New Orleans, Chicago and St. Louis ran second, third and fourth respectively.

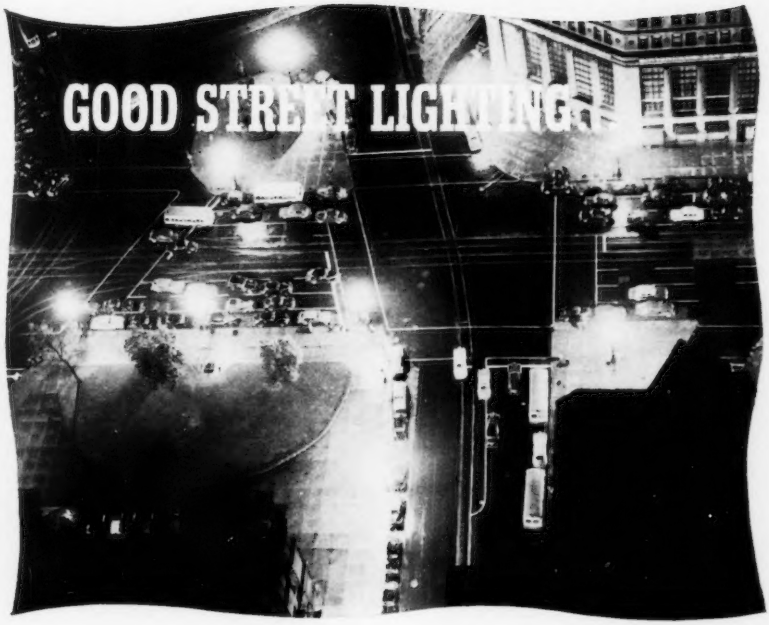
Los Angeles snagged the vote for the town with the most beautiful women.

Recognize these gents? They are: Prof. C. C. Wiley, Harold Hammond, Bill McConochie, and R. F. Michel. Oh Yes! The framed dignitary is Hawley Simpson, then President of the Institute. The occasion—*The* 1941 *Annual I. T. E. Meeting.* SEE YOU AT THE 1946 MEETING IN COLUMBUS.

★ ★ ★

### Eno Stages Third Conference

The third annual highway traffic conference of the Eno Foundation was held September 6 at the Waldorf-Astoria Hotel in New York. It was opened by Col. Robt. Goetz, President of the Foundation.




*the sign of a good place to LIVE*

DETROIT, prior to 1937, reported 75 percent of its night traffic fatalities on only 4.5 percent of its street mileage. Then these fatal stretches were relighted. Night traffic fatalities, where modern lighting was in use, dropped to 26 percent of the city's total. Was the improvement worth it? Detroit people think so. Today, Detroit is considered one of the best lighted big cities in the country . . . is proud of its good reputation. The life saving, property improving values of good street lighting can be so easily demonstrated. Is your community realizing all the good from good street lighting?

**The Street and Traffic Safety Lighting Bureau, 155 East 44th St., New York 17, N. Y.**

Dr. Herbert J. Stack, Director of the Center For Safety Education at New York University discussed the subject "Traffic Safety Training Activities at a Local Level." R. Getty Browning, Senior Locating and Claim Engineer of the North Carolina Highway Department talked on "Highway Design Standards." Inspector L. A. Hince of the Federal Bureau of Investigation, Washington, D. C. presented a paper on "Traffic Administration in Local Police Departments." William Greene, Director, Conn. Highway Safety Commission talked on "Getting Support for Traffic Safety Education in the Community."

During the afternoon session a panel on the control and regulation of parking in urban areas was scheduled. Participants in the panel included Wilbur Smith, Associate Director, Yale Traffic Bureau; Chief Henry P. Clark of the New Haven, Connecticut Department of Police Service; John T. Gibala, Civil Engineer with the Police Department of New York City; Chief John M. Gleason, Greenwich, Connecticut Police Department; W. L. Groth, Safety Engineer with the Commonwealth of Virginia; Inspector Arthur E. Miller of the Metropolitan Police Department, Washington, D.C.; J. A. Pryde of the International Association of Chiefs of Police, and J. McGarvey, N. Y. Police Department.

The Eno Foundation played host to the registrants at a sumptuous banquet between the morning and afternoon sessions.

## Traffic at the Safety Congress

Traffic sections at the National Safety Congress are listed Monday through Friday at the Palmer House, Chicago, October 7-11. An exception is the Wednesday morning session to be held at the Stevens Hotel.

Following the general Congress session and Annual Meeting of Members, Oct. 7 at the Stevens, there will be a general session of the Traffic Section in the Red Lacquer Room of the Palmer House, followed by discussion on four topics, "Traffic Safety and the Public Attitude," "The City's Stake in Traffic Safety," "The State's Stake in Traffic Safety," and a panel discussion on "How We Did It" by representatives of winners in the 1945 National Traffic Safety Contest.

The Police Division will meet Tuesday morning at the Palmer House, as will the Traffic Court Division.

Traffic Engineers will meet in two group sessions on Tuesday morning and Wednesday afternoon. Subjects to be discussed are "Responsibility of Highway Features in Traffic Accidents," "Subdivision Layout for Traffic Safety," "Relation of Parking to Traffic Safety," "Parking from the Retailer's Standpoint," and "Small City Traffic Safety and Parking Problems" (panel discussion).

Tuesday afternoon there will be three topics discussed concerning railroad crossing accidents, traffic schools, and accident prevention agencies cooperation. Wednesday morning will feature discussions of follow-up on recommendations of the President's Highway Safety Conference.

Wednesday afternoon will also see the group session on Public Safety Education.

Thursday morning the general session will discuss the Dayton, Ohio and other pedestrian programs.

Three meetings of the Commercial Vehicle Section and the Transit Section have been scheduled.

## A.A.S.H.O. To Meet

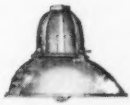
The American Association of State Highway Officials will hold its annual meeting from Dec. 17 through Dec. 20 at the Biltmore Hotel, Los Angeles, Calif.

HERE are the successors to the radial-wave reflector—two new G-E suburban reflectors that now bring scientific light distribution to the lighting of residential streets. Light formerly dissipated in non-useful directions is utilized to better advantage. Direct glare is greatly reduced. Uniformity of illumination on the road is much improved, yet installation and maintenance are easy.

Two types—open and enclosed—using series lamps of 1000- or 2500-lumen rating are available with adapters to fit practically any fixture that takes the standard-dome radial-wave reflector. They may be installed either as unit-for-unit replacements to provide better light distribution, or in accordance with I.E.S. Recommended Practice to obtain specified illumination levels at low cost.

These G-E suburban reflectors offer utilities an inexpensive way to improve suburban lighting in their communities and to keep that lighting at high efficiency for years of low-cost service. Why not check the features listed here, then ask your local G-E representative how these reflectors can fit into your suburban streetlighting plans? *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

**(a) Form 72 CR luminaire with enclosed suburban reflector. Simple latches and a safety chain facilitate relamping.**



**(b) Form 45 luminaire with open suburban reflector. Either one or two shields may be easily attached if needed.**

STREET LIGHTS *for better seeing*

**GENERAL ELECTRIC**

452-40D-3010

### E. B. Lefferts Dies

E. B. Lefferts, one of the charter members of the Institute of Traffic Engineers, died suddenly of a heart attack on August 16. "Ned," as he was known fondly to his many associates, had served the past 25 years as Manager of the Public Safety Department, Automobile Club of Southern California, Los Angeles, and has always been active in Institute affairs. At the time of his death, he was a member of the Traffic Engineering Education Committee.

Mr. Lefferts' passing is a distinct shock and a deeply felt loss to his many friends and business associates. Funeral services were held at his home, 1833 Buckingham Road, Los Angeles, and his body has been taken to Omaha, Nebraska, for burial.

Mr. Lefferts was born at Council Bluffs, Iowa, on October 17, 1887. He attended Union University in 1907-1908. From 1909-1920 he was the Supt. of Lead Refinery, American Smelting and Refining Company, in charge of the Metallurgical Plant. In 1921 he became affiliated with the Automobile Club.

### I.A.C.P. Meets In Mexico

The 53rd annual conference of the International Association of Chiefs of Police will be held Sept. 23-27 in Mexico City. Chief of Police Fred A. Roff of Morristown, N. J., President, will preside.

Approximately 1000 police officials from the United States, Mexico, Canada and Central and South American countries are expected to attend. It will be the first IACP conference ever held in Mexico.

### TRAFFIC ENGINEERS WANTED

Traffic Engineer wanted for City of Fort Worth, Texas. Anyone interested please write the acting City Manager, W. O. Jones and send a brief statement of training and experience. Salary approx. $5,000.

The City of Long Beach, California, desires a traffic engineer. Interested persons should write the City Manager, Sam Vickers, and send a brief statement of training and experience. Salary approx. $3600.

## PERSONAL ITEMS

**Herman J. Hoose** (Assoc. Mem. I. T. E.) recently accepted the position of Assistant Traffic Engineer of Fort Wayne, Indiana. Hoose was formerly Traffic Engineer of Toledo, O., working in the City Planning Commission.

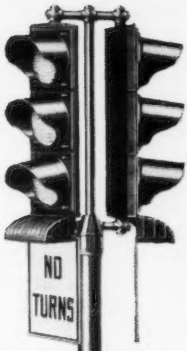
**C. G. Stoneburner** (Mem. I. T. E.) was recently made head of the Highway Division of Virginia's Arlington County Department of Public Service. Stoneburner, former traffic engineer of the County, now has charge of design, construction and maintenance of County roads and sewers, street lights, utilities, traffic control and safety. He was President of the Washington, D.C. Section, I.T.E., during the past year.

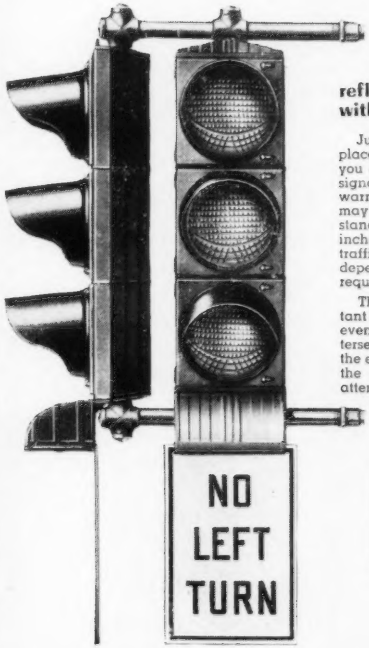
**Henry W. Osborne** (Member I. T. E.) Buffalo City Traffic Engineer reports he is busy starting the street lighting modernization program, preparing parking meter specifications, getting ready for the snow storms and writing new pedestrian ordinances.

**Dwight McCracken** (Member I. T. E.) has been named manager of the newly created Motor Transport Bureau of the Liberty Mutual Insurance Co.

This Bureau has been staffed with men especially trained in loss prevention under Mr. McCracken.

# Now..... you can have an *illuminated sign* on any CROUSE-HINDS one-way or adjustable traffic signal.




## This NEW base light reflector is interchangeable with the regular end plate

Just remove the end plate and replace it with the base light and there you are ... with an up-to-the-minute signal that can carry any illuminated warning or information sign that you may desire. The base will take a standard sign 12 x 18, 18 x 24 or 24 x 36 inches. Either one or two 60-watt traffic signal lamps may be used, depending upon the amount of light required.

This illuminated sign is an important safety measure in any location.... even at brightly lighted downtown intersections where the extra light from the efficient base reflector, high lights the sign and attracts the motorist's attention.

Crouse-Hinds Catalog 226 lists a complete line of traffic signals, beacons, flashers, and a series of controllers designed to help you solve your traffic control problems ... from simple installations up to the most complex heavy traffic problem. Send for your copy.

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Offices: Birmingham — Boston — Buffalo — Chicago — Cincinnati — Cleveland — Dallas — Denver — Detroit — Houston — Kansas City Los Angeles — Milwaukee — Minneapolis — New York — Philadelphia — Pittsburgh — Portland, Ore. — San Francisco — Seattle St. Louis — Washington. *Resident Sales Engineers:* Albany — Atlanta — Charlotte — Indianapolis — New Orleans
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CONDULETS · TRAFFIC SIGNALS · AIRPORT LIGHTING · FLOODLIGHTS

**Baltimore Is Looking for a City Traffic Engineer**

**Starting Salary $4500**

To direct Traffic Engineering Bureau of Police Department

**Protected by Civil Service**

Application should be made by letter to

**Com'r. Hamilton Atkinson**
**Fallsway & Fayette Sts.**
**Baltimore 2, Md.**

**Henry Evans** (Assoc. Mem. I. T. E.) Director, Traffic Engineering Division, National Conservation Bureau, has just completed a city-wide traffic survey of Parkersburg, West Virginia.

**Elroy Ericksen** (Assoc. Mem. I. T. E.) has joined the teaching staff at the Yale University Bureau of Highway Traffic. He was formerly Traffic Engineer, Division of Highway Planning, Georgia State Highway Department.

## NEW MEMBERS

The following men were elected for membership in the INSTITUTE at the July 24th meeting of the Board of Direction, which was held in Washington, D. C.:

### MEMBER

J. Paul Buckley, Sr. Highway Engineer, Dept. of Pub. Wks., Sacramento, Calif.

### ASSOCIATES

Winston H. Carsten, Traffic Engineering Division, State Highway Department, Olympia, Washington.

Capt. D. Kenneth Chacey, Chief, Planning & Logistics Branch, Hwy. Transport Service, War Dept., Arlington, Va.

Charles R. Gallagher, Consulting Engineer, 95 S. Santa Cruz St., Ventura, California.

**WHY YOU SHOULD SPECIFY TUTHILL GUARD RAILS**

1. Strong, convexed steel panels. 2. Mounted on deflective springs that absorb heavy impacts. 3. Steel spring brackets mounted low on post for greater strength. 4. Visibility at great distances. 5. Deflective action saves lives, reduces damage. 6. Low maintenance cost.

*Write For Complete Details*

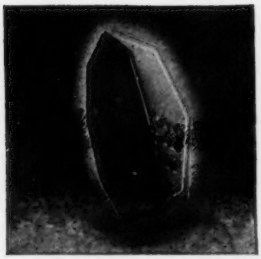
**TUTHILL SPRING CO.** 764 W. Polk St. CHICAGO 7, ILL.

# WHY GROTE SIGNS?

## HERE'S 5 GOOD REASONS WHY YOU SHOULD SPECIFY GROTE TRAFFIC CONTROL SIGNS

**1** **Grote Signs are always Legible,** using only the newest U. S. approved lettering that commands drivers' attention. Grote Snaplock reflector buttons give you reflection of the **Warning Message,** making drivers familiar with traffic or road conditions in sufficient time to take the necessary precautions for safe driving!

**2** **The New Grote Snaplock Plastic reflector button** permits replacement of individual buttons, without **removing** the sign rear housing, or the sign from its stationary post. **NO OTHER REFLECTOR CAN** give you this reflective quality, this easy installation and maintenance of signs, and the economy effected by using these Grote Snaplock Reflector Buttons.



**3** **EXPERIENCE** has shown that **ANY PERMANENT TYPE REFLECTORIZED SIGN** must carry a rear housing plate to protect the reflectors, and the sign from being twisted and bent through vandalism. Rear housing plates are your assurance, that your signs will remain in place. Vandalism on a sign equipped with Grote reflector buttons, can be repaired **on the spot.**

**4** A Grote reflectorized sign resists being twisted or bent so consequently you are assured your Grote traffic signs will give your motorists the **full day and night protection,** you can depend upon. This must be considered where human lives are at stake, and officials desire the maximum safety precautions on your highways.

**5** The Grote Snaplock Reflector button is a revolutionary idea, giving you BETTER REFLECTION, EASIER INSTALLATION, AND MORE ECONOMICAL MAINTENANCE—all of those essential factors to good protective highway sign equipment. To insure the safety of your motorists, **SPECIFY GROTE SNAPLOCK REFLECTORIZED TRAFFIC SIGNS.**

**Write, wire or phone today, for your sample Grote Snaplock Reflector Button.**

**THE GROTE MANUFACTURING COMPANY, INC.**

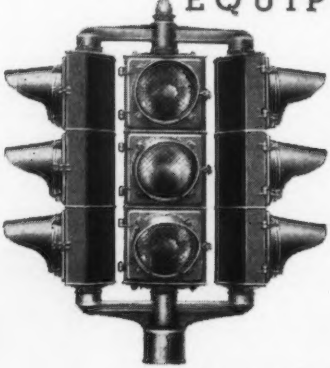
BELLEVUE, KENTUCKY, OPPOSITE CINCINNATI, OHIO

(FORMERLY THE NATIONAL COLORTYPE CO.)

MARBELITE is now set to serve you better than ever before. Our purchase of the Traffic Signal & Controller Division of the Signal Service Corp., places us in a still stronger position in the traffic signal field. When planning or placing orders for traffic signals, be sure to get the facts about MARBELITE . . . Signals, Controllers, Timers, Flashers, etc., that are modern in design, light in weight, sturdily constructed and thoroughly reliable.

Our engineers are prepared to help you solve your traffic problems. Tell us about your conditions. All types of signals are available, for large urban installations and for the less congested communities.

# MARBELITE
## Traffic Signal
# EQUIPMENT



Investigate the quality — reliability and simplicity of MARBELITE. Let your traffic signals be a mark of distinction to your community. Keep a steady flow of traffic and reduce accidents.

Keep the MARBELITE name on your suppliers list and get our proposals on your requirements.

## The MARBELITE CO., Inc.

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